

### **REMARKS**

Claims 1-20 are now in the application. By this Amendment, claims 9-11 are amended. Claim 9 is amended to correct an informality and not to limit the scope of this claim. Claims 10 and 11 have been amended to recite a process instead of a use. Support for the amendments to claims 10 and 11 is found at least at page 7, lines 6-9, of the specification. Claims 3-11 and 13-20 have previously been withdrawn by the Examiner. No new matter has been added by this Amendment.

### **Restriction Requirement**

The Office Action asserts that the Restriction Requirement is proper because the surface-modified nanoparticulate metal oxides are allegedly not a special technical feature providing a patentable advance over the applied references. Specifically, U.S. 6,218,459 to Gruning et al. is applied for suggesting features corresponding to the above-quoted special technical feature. However, Gruning et al. suggests, at col. 2, lines 40-44, that “[w]hile, however, homogeneous reaction products prepared under the customary esterification conditions are difficult to prepare, copolymeric, hydrophobically modified polyaspartic esters based on maleic monoesters and ammonia or on polysuccinimide and alcohols are easy to obtain.” The use of unmodified polyaspartic acid, as defined at page 3, line 40 to page 4, line 2, of the specification, is not disclosed in Gruning et al. Thus, the special technical feature of the pending claims has not been suggested by Gruning et al. Withdrawal of the Restriction Requirement and rejoinder of the withdrawn claims are respectfully requested.

Claims 1, 2 and 12 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,827,508 to Tanner et al. in view of U.S. Patent Application Publication No. 2003/0155668 to Stalberg et al., and further in view of U.S. Patent No. 5,939,518 to Mazo et al.

The application of Tanner fails because the proposed modification would render Tanner unsatisfactory for its intended purpose. Accordingly, as set forth in MPEP §2143.01(V), there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Also, there is no well reasoned articulated rationale to do so. As set forth on page 6, line 23, to page 7, line 3, of the specification, a surface-modified nanoparticulate metal oxide in accordance with independent claim 1 forms stable aqueous dispersions. By contrast, Tanner suggests, at col. 16, lines 33 – 43, that hydrophobic surface-treated zinc-oxide was added to the oil phase of all four disclosed examples. Accordingly, if Tanner was modified as proposed in the Office Action, the resulting zinc oxide would no longer be hydrophobic and could not be dispersed in the oil phase. Thus, the application of Tanner in formulating the rejection fails.

Further, Tanner suggests a sunscreen compound that contains, as essential components, dibenzoylmethane and surface-treated zinc oxide. The particularly preferred zinc oxide suggested in col. 7, lines 17-29, of Tanner is a silicone-coated hydrophobic zinc oxide. As such, Tanner suffers from the same deficiencies of the related art discussed on page 3, lines 18-27, of the specification in that silicone-coated hydrophobic zinc oxide does not always have the required pH stability and that various silicone-coated metal oxides are incompatible with each other, which may lead to undesired aggregate formations.

Moreover, Tanner suggests a large number of possible surface treatment materials for treating zinc oxide particles. Among others, Tanner suggests amino acids and N-acyl amino acids. Accordingly, Tanner suggests the use of un-polymerized, mono-molecular amino acids or derivatives thereof. A person of ordinary skill in the art does not find motivation or a rationale in the disclosure of Tanner to use polymerized amino acids, let alone polyaspartic acid. What is more, the claimed product in Tanner are hydrophobic Z-Cote® HP1 coted zinc oxide particles, whereas a surface treatment with polyaspartic acid results in hydrophilic particles.

In addition, the proposed combination of Tanner and Stalberg would change the principle of operation of Stalberg. As set forth in MPEP §2134.02 VI, “[i]f the proposed modification or

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combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious.” *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). Stalberg suggests a method for producing a suspension of an undecomposed meltable material from an emulsion. Stalberg suggests, at paragraph [0014] that substances which can be melted without decomposing are understood to be substances which have a melting point or melting range of 25° to 300° C. In addition, as set forth in paragraph [0015], the preferred substances are organic substances, and, more particularly, organic substances poorly soluble in water. The emulsion is prepared, as set forth at paragraph [0048], by heating the substance beyond its melting point. In other words, Stalberg suggests a method to manufacturing small particles of meltable material. Tanner, on the other hand, suggests the use of zinc oxide. Zinc oxide has a melting point of 1975° C at which it decomposes. See the enclosed printout from Wikipedia.com. Zinc oxide is not a meltable substance as defined in Stalberg. Thus, Tanner cannot be combined with Stalberg without changing the principle of operation of Stalberg for at least the reason that zinc oxide cannot be melted without decomposition. Further, there is not motivation or rationale to replace the meltable organic substances suggested in Stalberg with the zinc oxide particles suggested in Tanner.

The Office Action cites Mazo for suggesting a polyasparaginic acid with molecular weight  $M_w$  of from 1,000 to 100,000. Mazo relates to a method for the production of polysuccinimide by the catalytic polymerization of aspartic acid. Mazo fails to suggest features that can reasonably be considered to correspond to a surface-modified nanoparticulate metal oxide, as positively recited in Claim 1.

Applicants respectfully request that withdrawn claims 3-9 and 13-20 be rejoined upon allowance of claims 1, 2 and 12 for at least the reason that the withdrawn claims comprise all of the features of elected claims.

In view of the above, Applicants believe the pending application to be in condition for allowance. Favorable reconsideration and prompt allowance of the pending claims are respectfully requested.

Should the Examiner believe an interview may be helpful to further the prosecution of this application, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Applicants believe no fee is due with this response. However, if a fee is due, please charge any fee to Deposit Account 03-2775, under Order 12810-00346-US1 from which the undersigned is authorized to draw.

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Respectfully submitted,

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